REMARKS

Claims 1, 2 and 9 have been amended. Claims 1-9 are currently pending. Reexamination and allowance of the pending claims are respectfully requested.

In the Office Action dated October 16, 2007, claims 1-9 are rejected under 35 USC 103(a) as being unpatentable over Lee et al. (Lee), US Patent No. 6,138,025 in view of Seraj, US Patent No. 6,535,745. The rejection is respectfully traversed.

Claim 1

In independent claim 1, the registration areas are determined according to dynamic partition units, that is, the second registration areas are determined according to the first partition units, while the third registration areas are determined according to the second partition units. More specifically, the second registration areas are determined by performing a registration area determining procedure according to the mobility data corresponding to the first partition units, and each second registration area comprises at least one first partition unit; the third registration areas are determined by performing the registration area determining procedure according to the mobility data corresponding to the second partition units, and each third registration area comprises at least one second partition unit. Further, at least one of the second partition units is generated by combining at least two of the first partition units when the overall cost of the first registration areas is lower than or equal to the overall cost of the second registration areas, and at least one of the second partition units is generated by partitioning one of the first partition units when the overall cost of the first registration areas is higher than the overall cost of the second registration areas. That is, the size and the boundary of the partition unit can be dynamically adjusted according to the comparison of overall costs of the registration areas. In this way, the situation of "local minimum" can be avoided (please see [0018]~[0019] of the specification of the present application).

For instance, in FIG.4 of the present application, nodes 1-10 are to be partitioned into registration areas. Each node represents a partition unit, e.g. a cell, each label attached on a node represents the paging load of the node, and each number attached on a link represents the location update (LU) load between two nodes. After performing a

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KL/FM-based algorithm, the result is shown in FIG.7, where four registration areas D, F, H and I are determined. Since the registration areas subsequently determined cannot generate a lower overall LU load (i.e. the overall cost of the first registration areas is lower than or equal to the overall cost of the second registration areas, as described in claim 1), at least one of the new partition units (i.e. second partition units) is determined by combining the original partition units (i.e. first partition units), e.g. nodes 1 and 4 are merged, and the paging load and LU load are also re-calculated, as shown in FIG.9. Then, the KL/FM-based algorithm is performed again based on the new partition units (i.e. the partition units are dynamically adjusted during the process of determining the registration areas), and the result is shown in FIG.10. Since a lower overall LU load is obtained (i.e. the overall cost of the first registration areas is higher than the overall cost of the second registration areas, as described in claim 1), the merged partition units are partitioned into the previous partition units, as shown in FIG.11.

However, the method for determining registration areas according to dynamic partition units as described in claim 1 is not disclosed or suggested by any of Lee and Seraj. In Lee, the VMLAs are determined based on single cells. As shown in FIG.7A of Lee, the best cell is moved from the greater loaded VMLA to the lesser loaded VMLA, so as to obtain VMLAs with balanced loads. Though the best pair of cells is considered in FIG.7B, it is used for cell swapping. That is, the two cells in the best pair belong to different VMLAs, and are swapped between the different VMLAs to reduce the number of VMLA registrations. Thus, it is also in nature a singe cell moved from a VMLA to another. In Seraj, the location area is also defined by repeatedly adding or removing a single cell. As shown in FIG.2 of Seraj, an adjacent cell having the highest volume of handoff traffic with all the cells in the working location area is added to the working location area. Further, if the maximum paging capacity of the working location area has been exceeded, then the last cell added is removed from the working location area.

Thus, both Lee and Seraj fail to teach or suggest all of the limitations claimed in independent claim 1, so claim 1 is submitted to be in condition for allowance. Claims 2-9 depend from claim 1 and are submitted to be allowable for the same reasons.

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Thus, all pending claims are submitted to be in condition for allowance. The Examiner is encouraged to telephone the undersigned if there are informalities that can be resolved in a phone conversation, or if the Examiner has any ideas or suggestions for further advancing the prosecution of this case.

Respectfully Submitted,

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